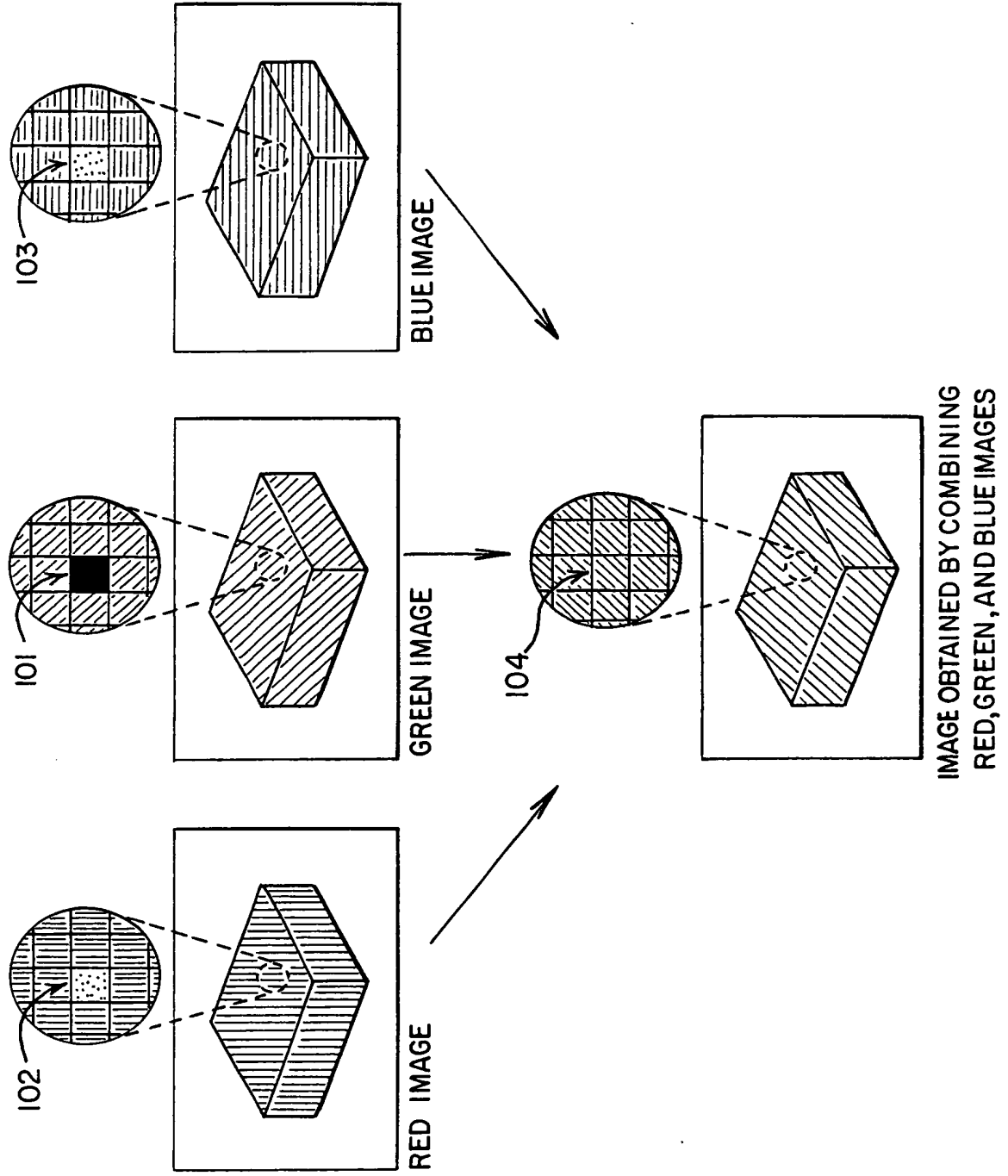


FIG.1



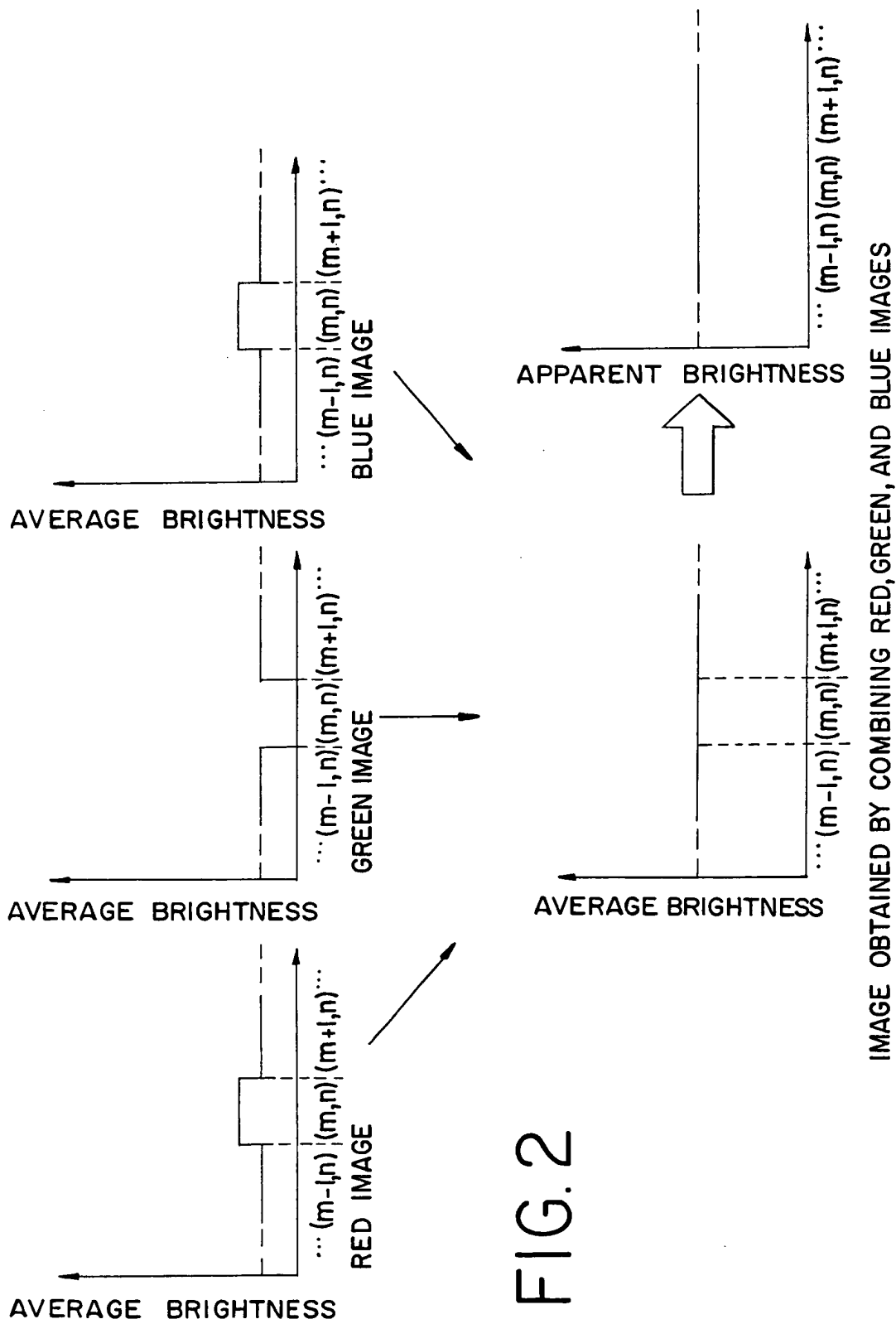
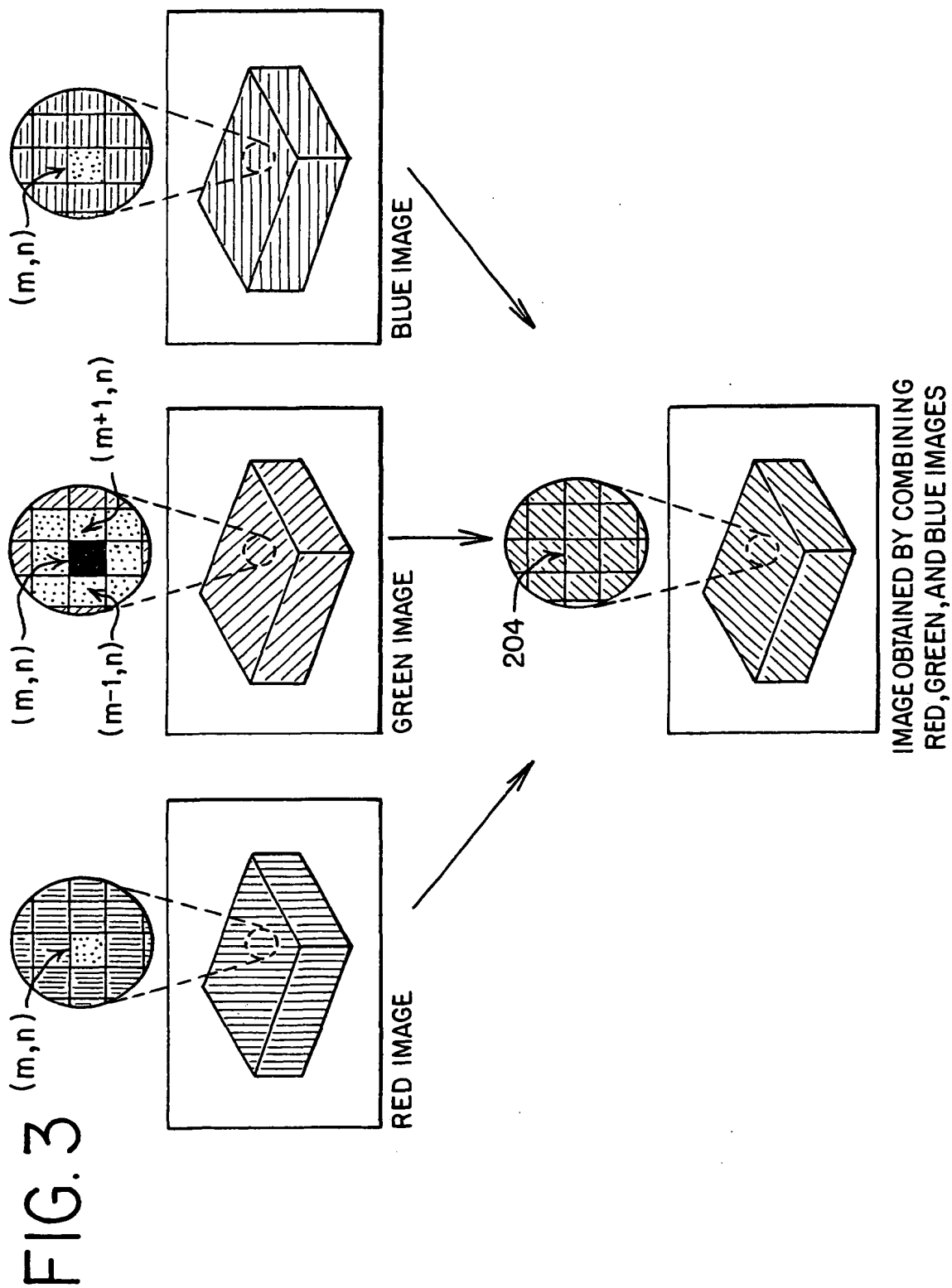


FIG. 2



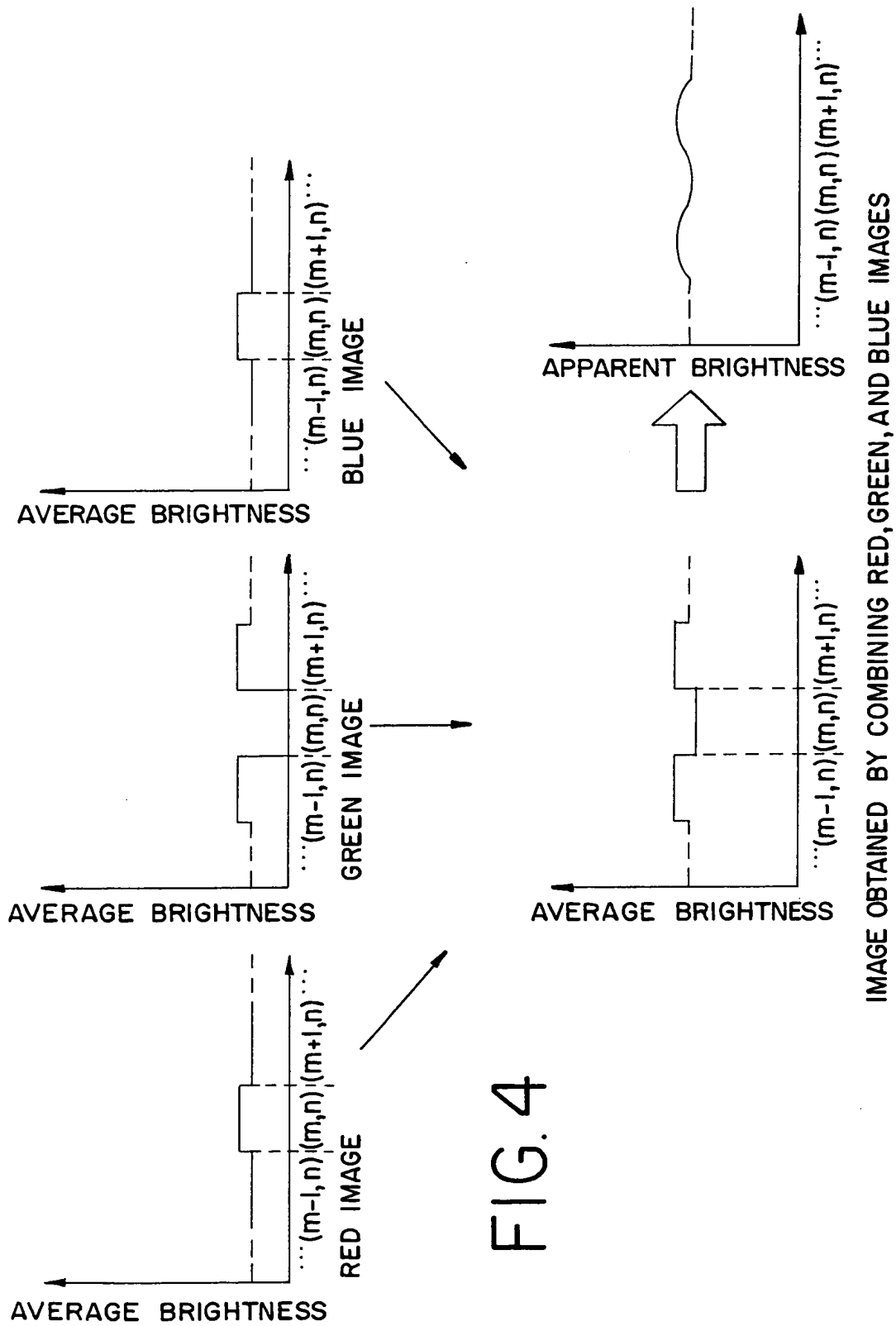


FIG.4

FIG. 5

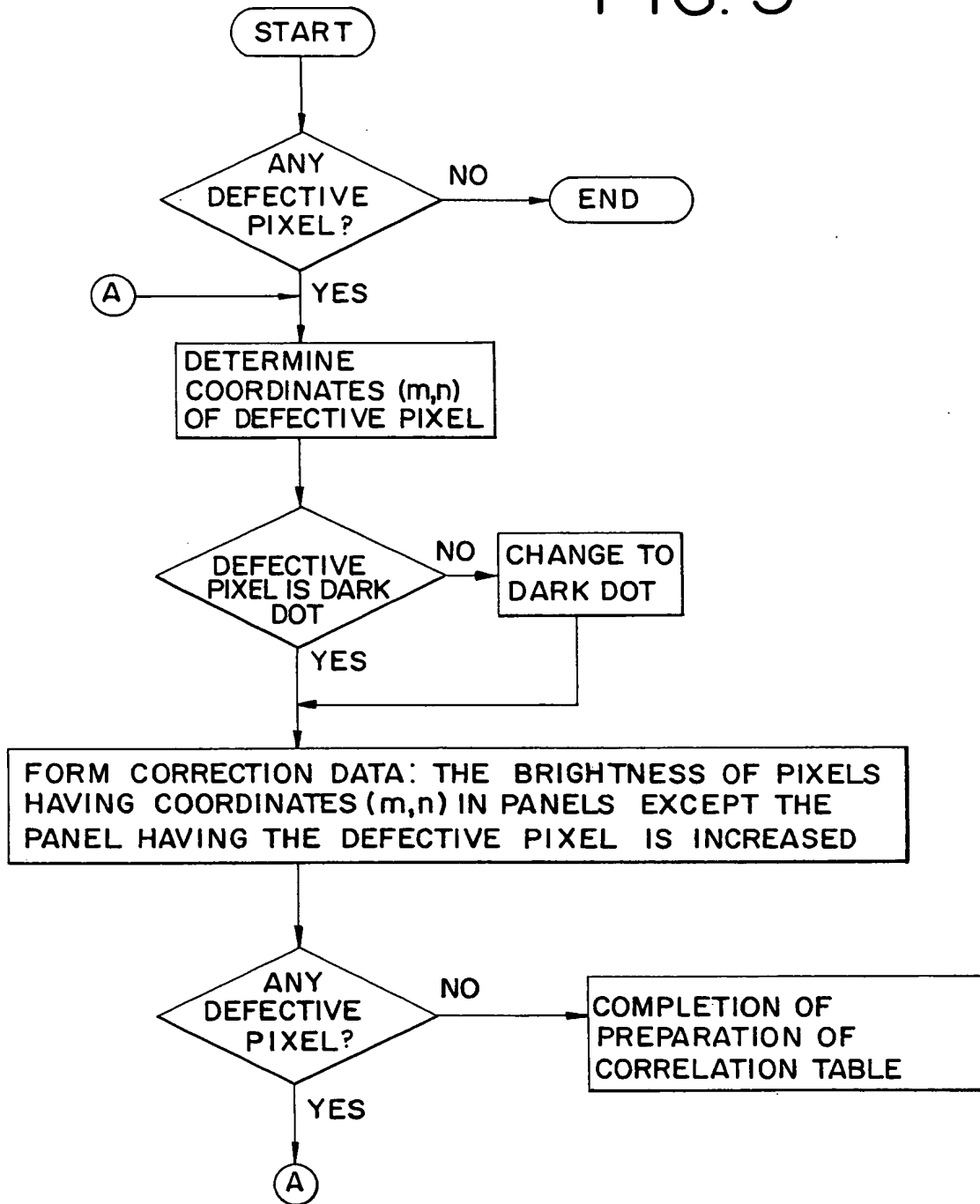


FIG. 6

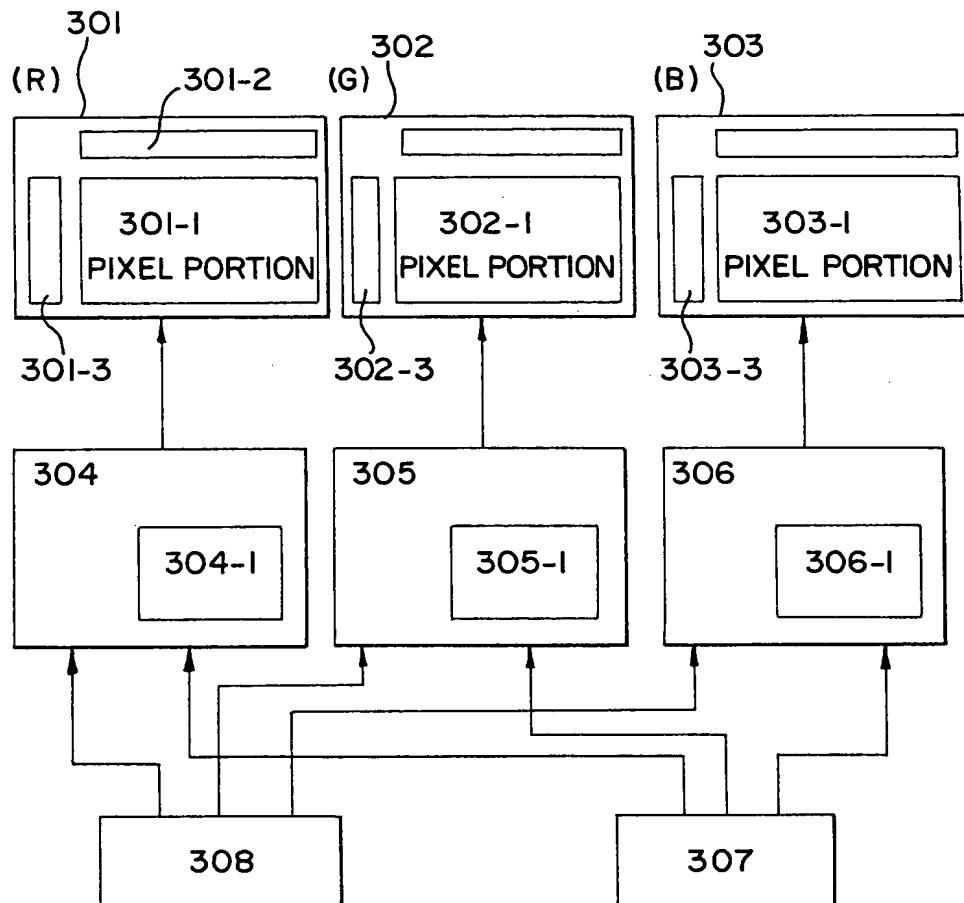


FIG. 7

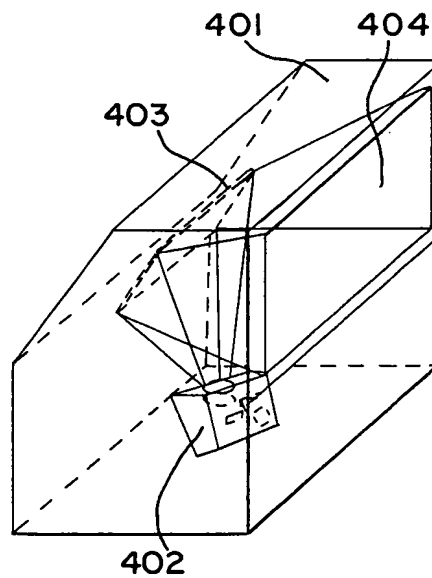


FIG. 8

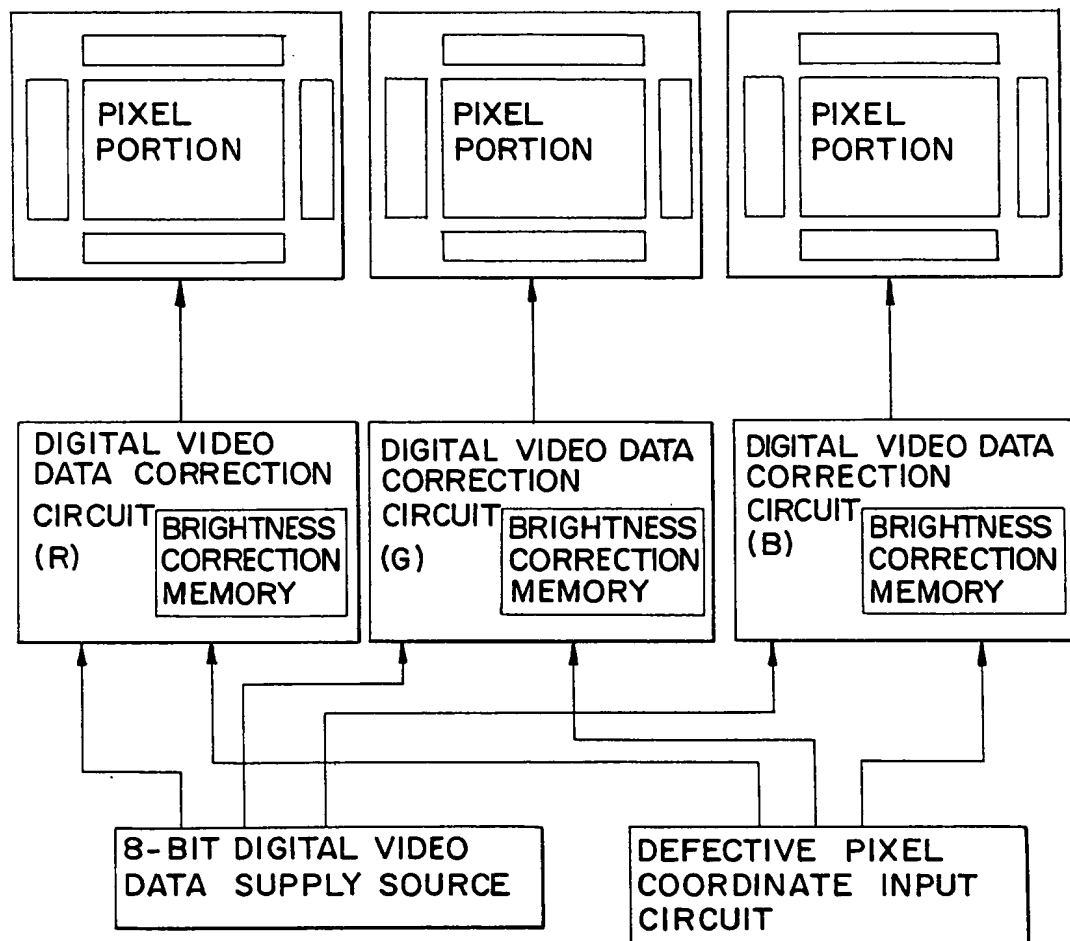


FIG. 9

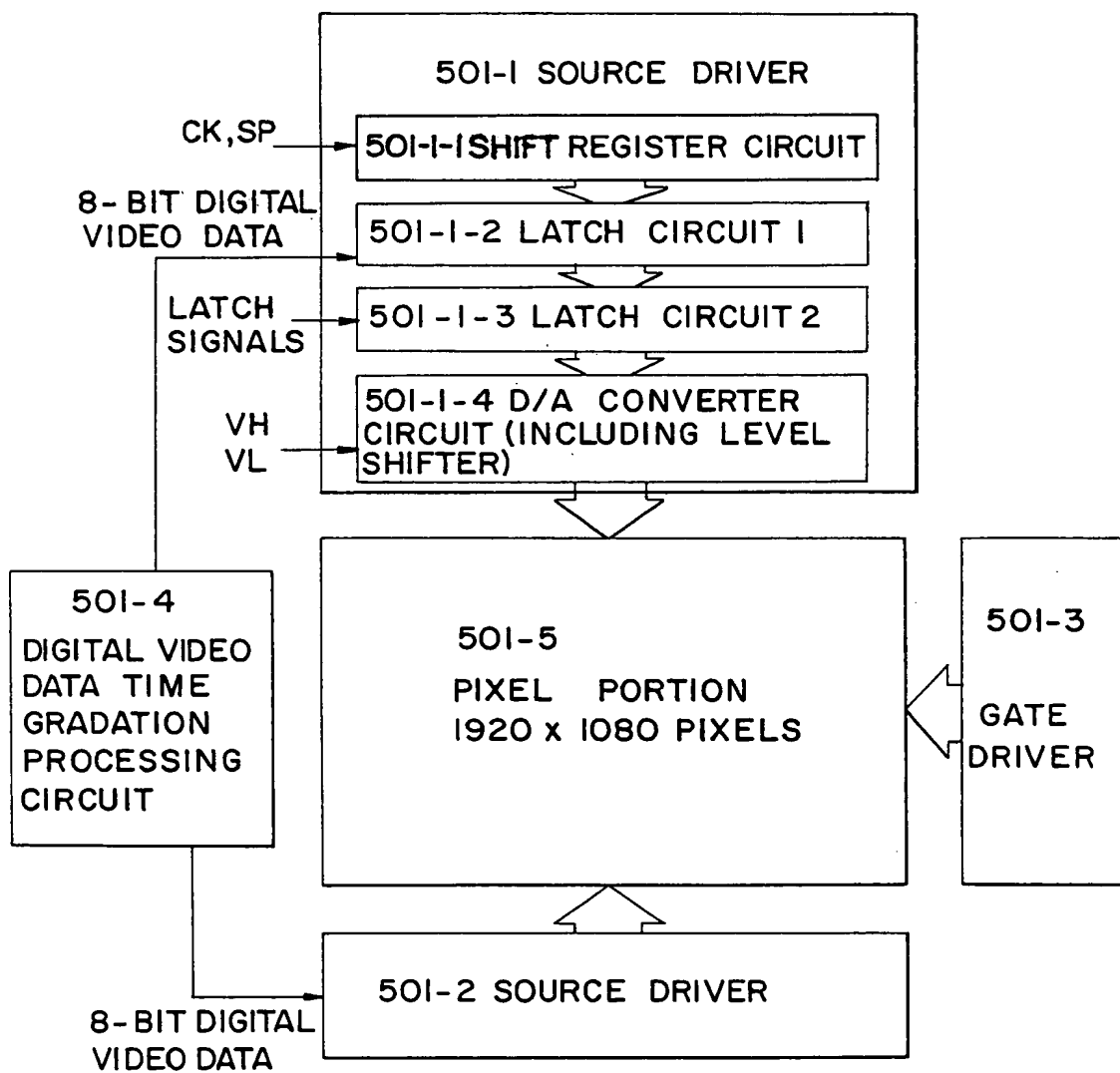


FIG. 10

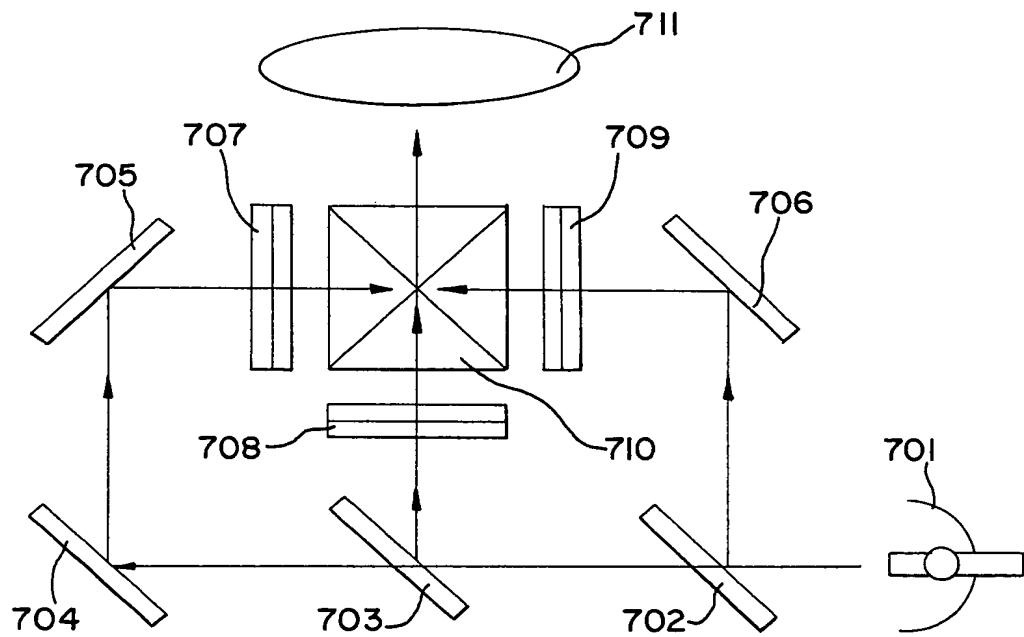


FIG. 11

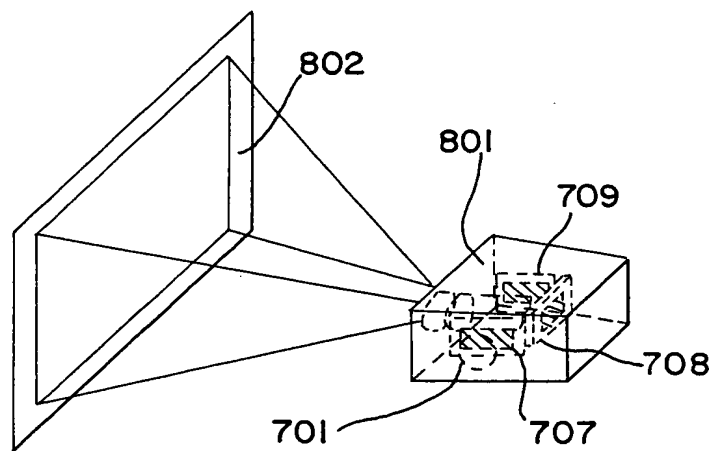


FIG. 12

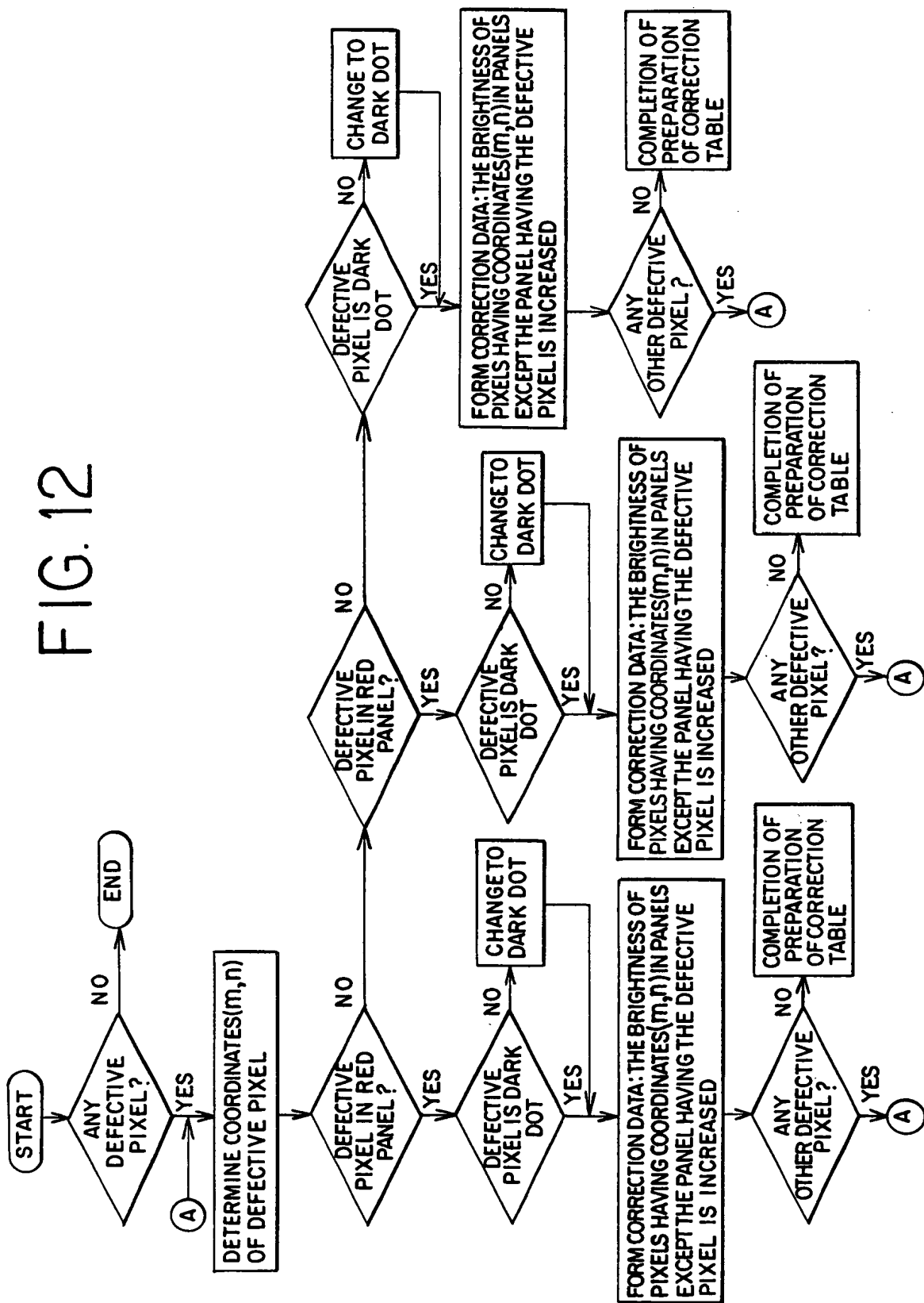


FIG. 13A

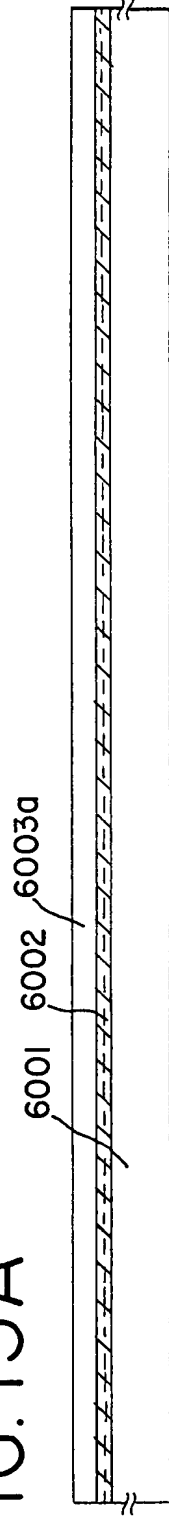


FIG. 13B

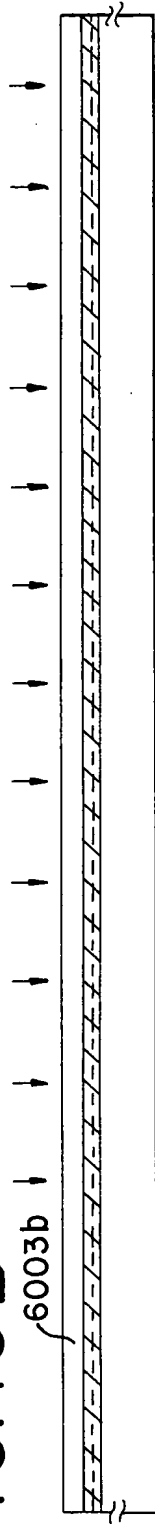


FIG. 13C

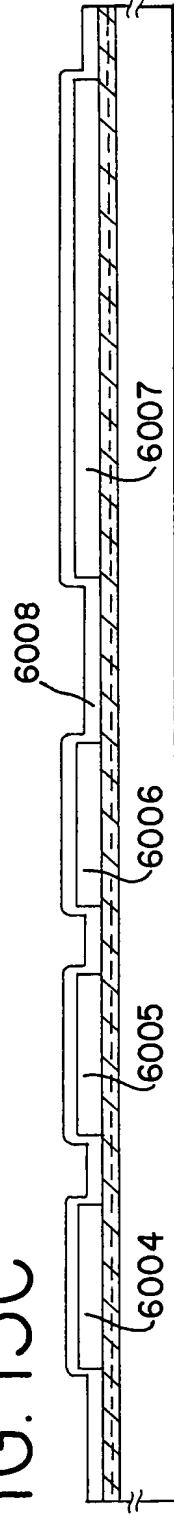


FIG. 13D

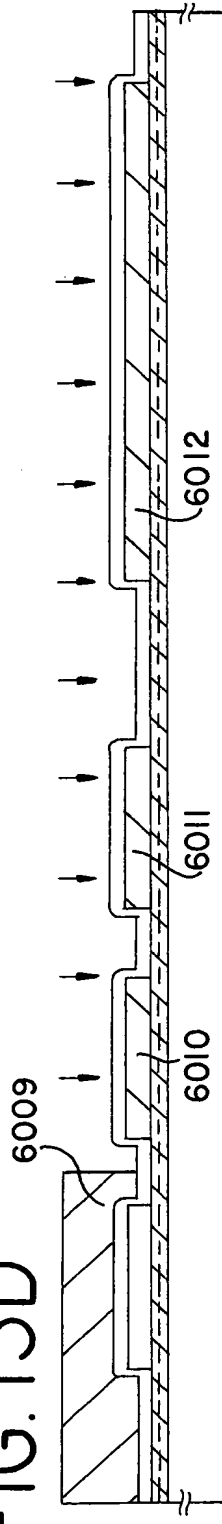


FIG. 14A

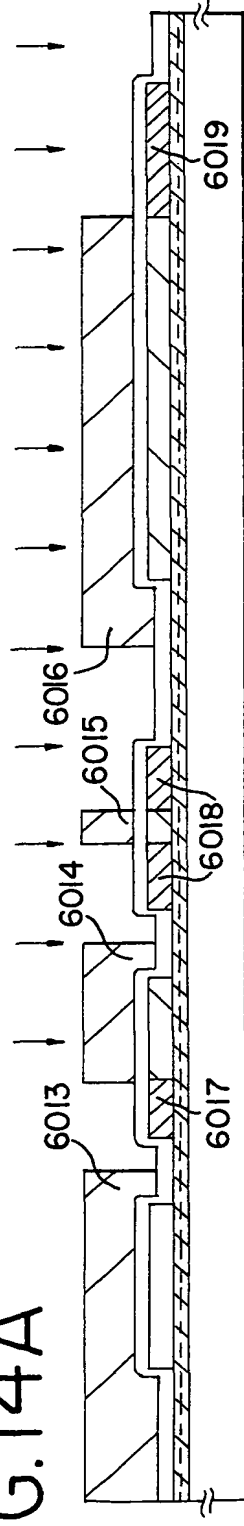


FIG. 14B

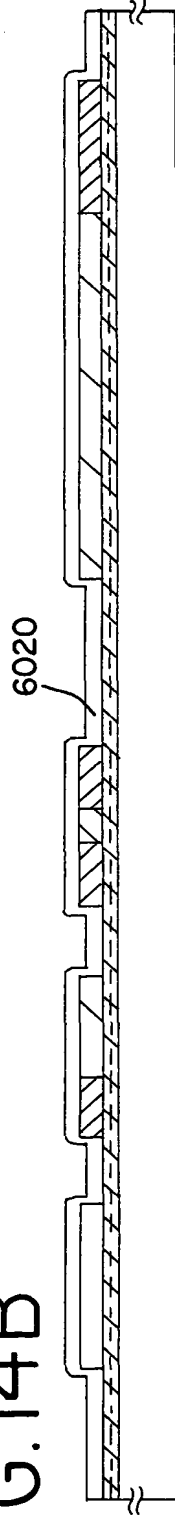


FIG. 14C

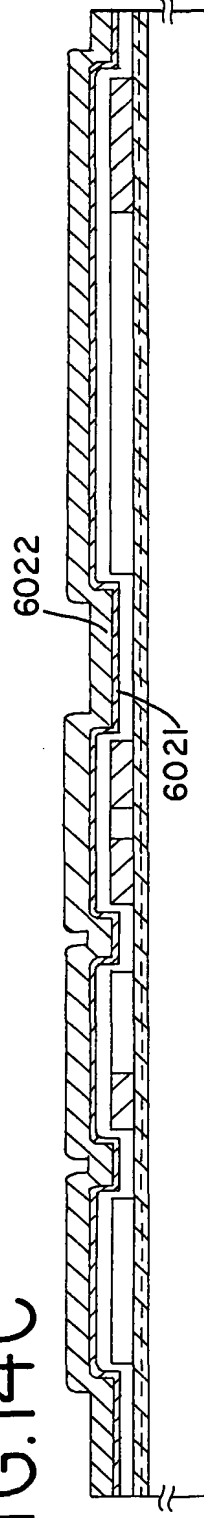


FIG. 14D

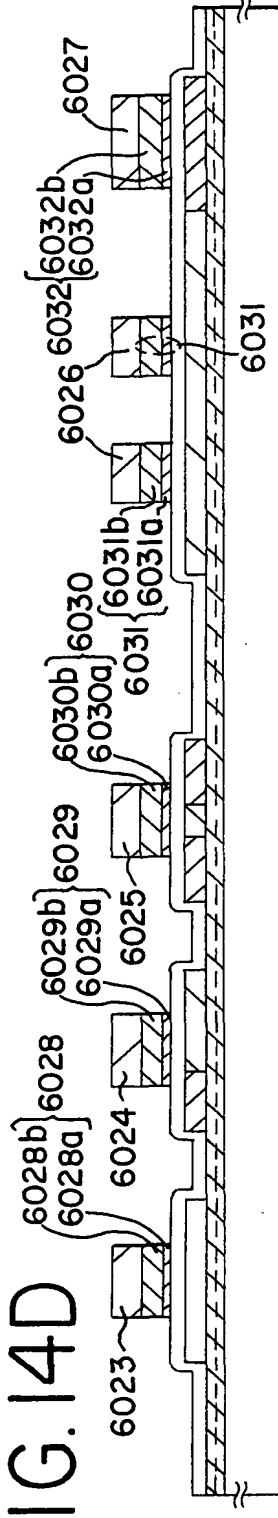


FIG. 15A

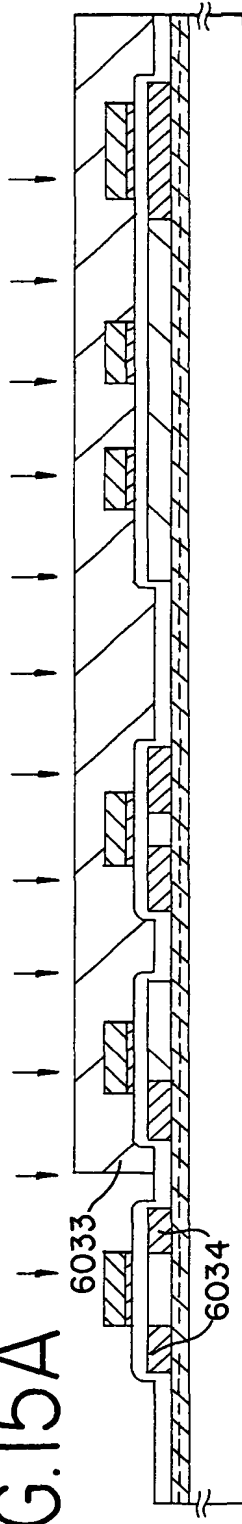


FIG. 15B

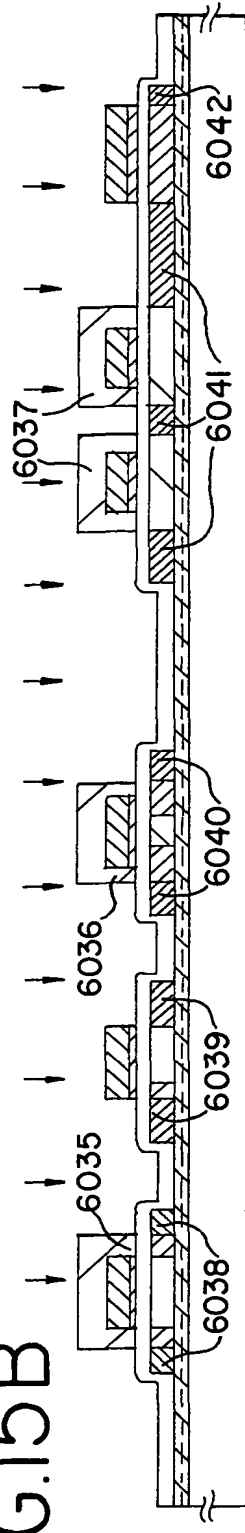


FIG. 15C

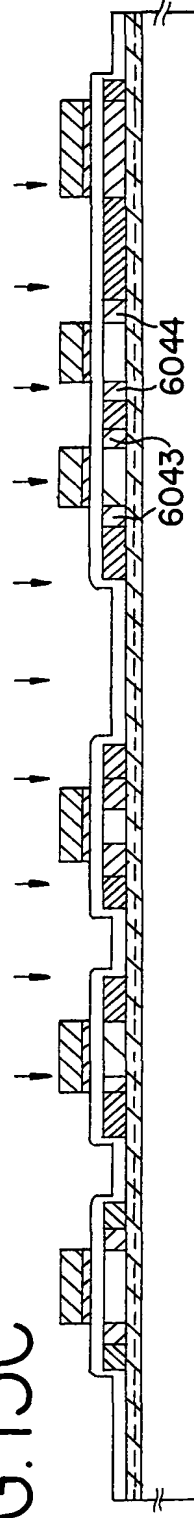


FIG. 15D

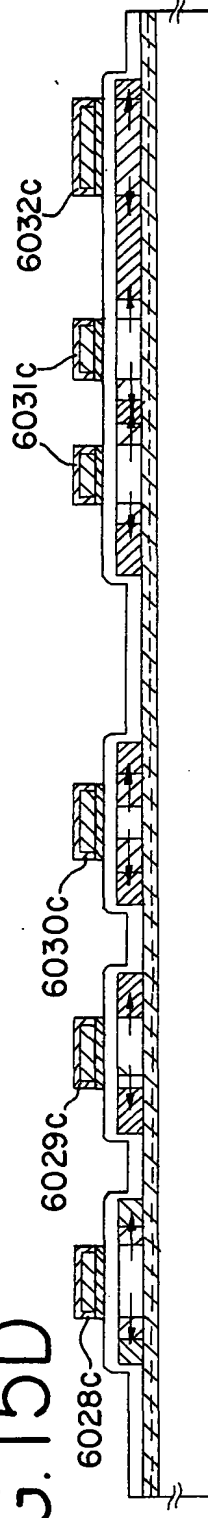


FIG. 16A

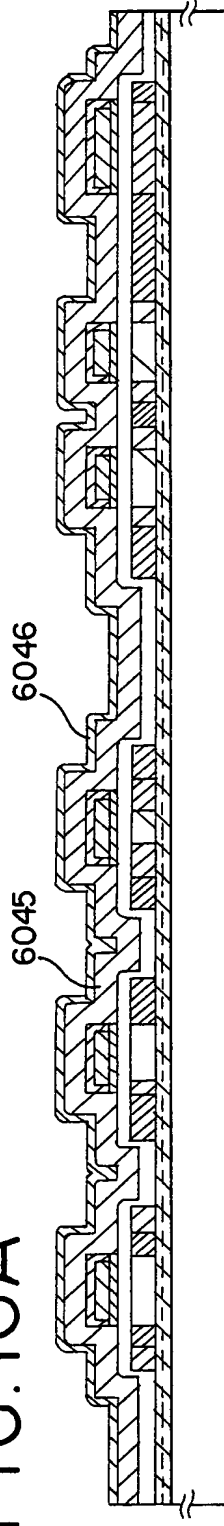


FIG. 16B

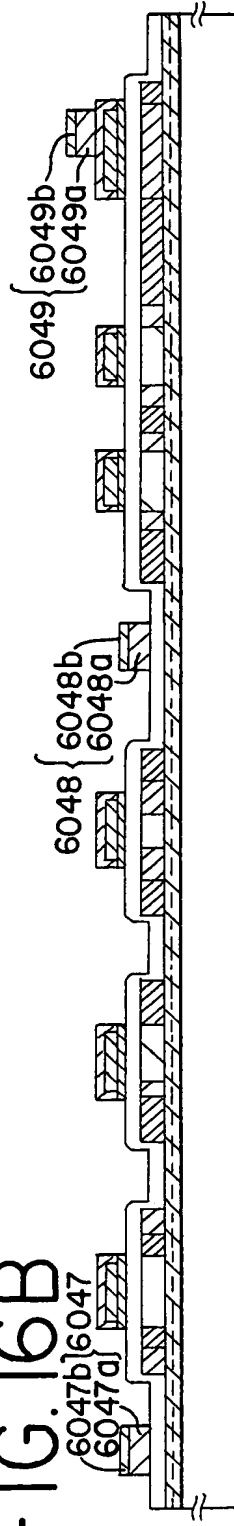
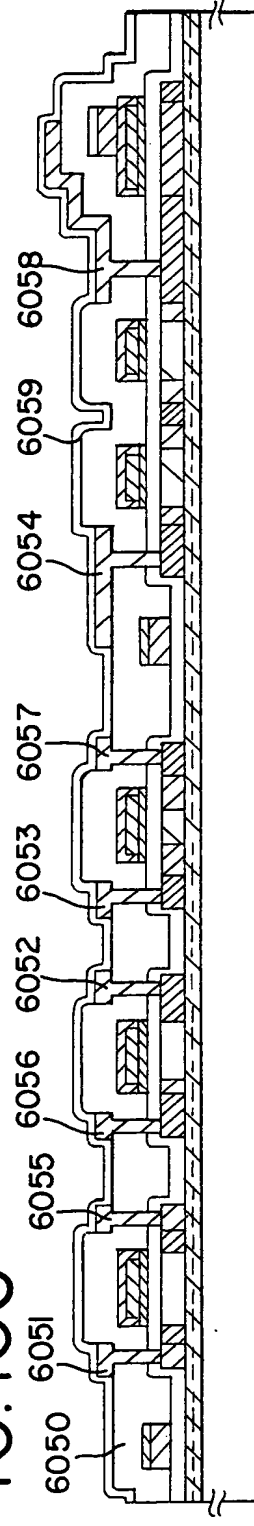


FIG. 16C



A detailed cross-sectional view of a pixel portion of a semiconductor device. The diagram shows multiple layers and components, with reference numerals indicating specific parts. The structure is divided into three main functional regions: the CMOS circuit, the sampling circuit, and the pixel portion. The CMOS circuit region includes components like 6001, 6107a, 6101, 6102, and 6103. The sampling circuit region includes components like 6002, 6107b, 6106, 6108a, 6108b, 6110, 6111, 6112, 6113, 6114, 6115, 6116, 6117, 6120, 6121, 6122, 6123, 6124, 6125, 6126, and 6127. The pixel portion region includes components like 6003, 6004, 6005, 6006, 6007, 6008, 6009, 6010, 6011, 6012, 6013, 6014, 6015, 6016, 6017, 6018, 6019, 6020, 6021, 6022, 6023, 6024, 6025, 6026, 6027, 6028, 6029, 6030, 6031, 6032, 6033, 6034, 6035, 6036, 6037, 6038, 6039, 6040, 6041, 6042, 6043, 6044, 6045, 6046, 6047, 6048, 6049, 6050, 6051, 6052, 6053, 6054, 6055, 6056, 6057, 6058, 6059, 6060, 6061, 6062, 6063, 6064, 6065, 6066, 6067, 6068, 6069, 6070, 6071, 6072, 6073, 6074, 6075, 6076, 6077, 6078, 6079, 6080, 6081, 6082, 6083, 6084, 6085, 6086, 6087, 6088, 6089, 6090, 6091, 6092, 6093, 6094, 6095, 6096, 6097, 6098, 6099, 6100, 6101, 6102, 6103, 6104, 6105, 6106, 6107, 6108, 6109, 6110, 6111, 6112, 6113, 6114, 6115, 6116, 6117, 6118, 6119, 6120, 6121, 6122, 6123, 6124, 6125, 6126, 6127, 6128, 6129, 6130, 6131, 6132, 6133, 6134, 6135, 6136, 6137, 6138, 6139, 6140, 6141, 6142, 6143, 6144, 6145, 6146, 6147, 6148, 6149, 6150, 6151, 6152, 6153, 6154, 6155, 6156, 6157, 6158, 6159, 6160, 6161, 6162, 6163, 6164, 6165, 6166, 6167, 6168, 6169, 6170, 6171, 6172, 6173, 6174, 6175, 6176, 6177, 6178, 6179, 6180, 6181, 6182, 6183, 6184, 6185, 6186, 6187, 6188, 6189, 6190, 6191, 6192, 6193, 6194, 6195, 6196, 6197, 6198, 6199, 6200, 6201, 6202, 6203, 6204, 6205, 6206, 6207, 6208, 6209, 6210, 6211, 6212, 6213, 6214, 6215, 6216, 6217, 6218, 6219, 6220, 6221, 6222, 6223, 6224, 6225, 6226, 6227, 6228, 6229, 6230, 6231, 6232, 6233, 6234, 6235, 6236, 6237, 6238, 6239, 6240, 6241, 6242, 6243, 6244, 6245, 6246, 6247, 6248, 6249, 6250, 6251, 6252, 6253, 6254, 6255, 6256, 6257, 6258, 6259, 6260, 6261, 6262, 6263, 6264, 6265, 6266, 6267, 6268, 6269, 6270, 6271, 6272, 6273, 6274, 6275, 6276, 6277, 6278, 6279, 6280, 6281, 6282, 6283, 6284, 6285, 6286, 6287, 6288, 6289, 6290, 6291, 6292, 6293, 6294, 6295, 6296, 6297, 6298, 6299, 6300, 6301, 6302, 6303, 6304, 6305, 6306, 6307, 6308, 6309, 6310, 6311, 6312, 6313, 6314, 6315, 6316, 6317, 6318, 6319, 6320, 6321, 6322, 6323, 6324, 6325, 6326, 6327, 6328, 6329, 6330, 6331, 6332, 6333, 6334, 6335, 6336, 6337, 6338, 6339, 6340, 6341, 6342, 6343, 6344, 6345, 6346, 6347, 6348, 6349, 6350, 6351, 6352, 6353, 6354, 6355, 6356, 6357, 6358, 6359, 6360, 6361, 6362, 6363, 6364, 6365, 6366, 6367, 6368, 6369, 6370, 6371, 6372, 6373, 6374, 6375, 6376, 6377, 6378, 6379, 6380, 6381, 6382, 6383, 6384, 6385, 6386, 6387, 6388, 6389, 6390, 6391, 6392, 6393, 6394, 6395, 6396, 6397, 6398, 6399, 6400, 6401, 6402, 6403, 6404, 6405, 6406, 6407, 6408, 6409, 6410, 6411, 6412, 6413, 6414, 6415, 6416, 6417, 6418, 6419, 6420, 6421, 6422, 6423, 6424, 6425, 6426, 6427, 6428, 6429, 6430, 6431, 6432, 6433, 6434, 6435, 6436, 6437, 6438, 6439, 6440, 6441, 6442, 6443, 6444, 6445, 6446, 6447, 6448, 6449, 6450, 6451, 6452, 6453, 6454, 6455, 6456, 6457, 6458, 6459, 6460, 6461, 6462, 6463, 6464, 6465, 6466, 6467, 6468, 6469, 6470, 6471, 6472, 6473, 6474, 6475, 6476, 6477, 6478, 6479, 6480, 6481, 6482, 6483, 6484, 6485, 6486, 6487, 6488, 6489, 6490, 6491, 6492, 6493, 6494, 6495, 6496, 6497, 6498, 6499, 6500, 6501, 6502, 6503, 6504, 6505, 6506, 6507, 6508, 6509, 6510, 6511, 6512, 6513, 6514, 6515, 6516, 6517, 6518, 6519, 6520, 6521, 6522, 6523, 6524, 6525, 6526, 6527, 6528, 6529, 6530, 6531, 6532, 6533, 6534, 6535, 6536, 6537, 6538, 6539, 6540, 6541, 6542, 6543, 6544, 6545, 6546, 6547, 6548, 6549, 6550, 6551, 6552, 6553, 6554, 6555, 6556, 6557, 6558, 6559, 6560, 6561, 6562, 6563, 6564, 6565, 6566, 6567, 6568, 6569, 6570, 6571, 6572, 6573, 6574, 6575, 6576, 6577, 6578, 6579, 6580, 6581, 6582, 6583, 6584, 6585, 6586, 6587, 6588, 6589, 6590, 6591, 6592, 6593, 6594, 6595, 6596, 6597, 6598, 6599, 6600, 6601, 6602, 6603, 6604, 6605, 6606, 6607, 6608, 6609, 6610, 6611, 6612, 6613, 6614, 6615, 6616, 6617, 6618, 6619, 6620, 6621, 6622, 6623, 6624, 6625, 6626, 6627, 6628, 6629, 6630, 6631, 6632, 6633, 6634, 6635, 6636, 6637, 6638, 6639, 6640, 66

CMOS CIRCUIT SAMPLING CIRCUIT
DRIVER CIRCUIT

FIG. 18

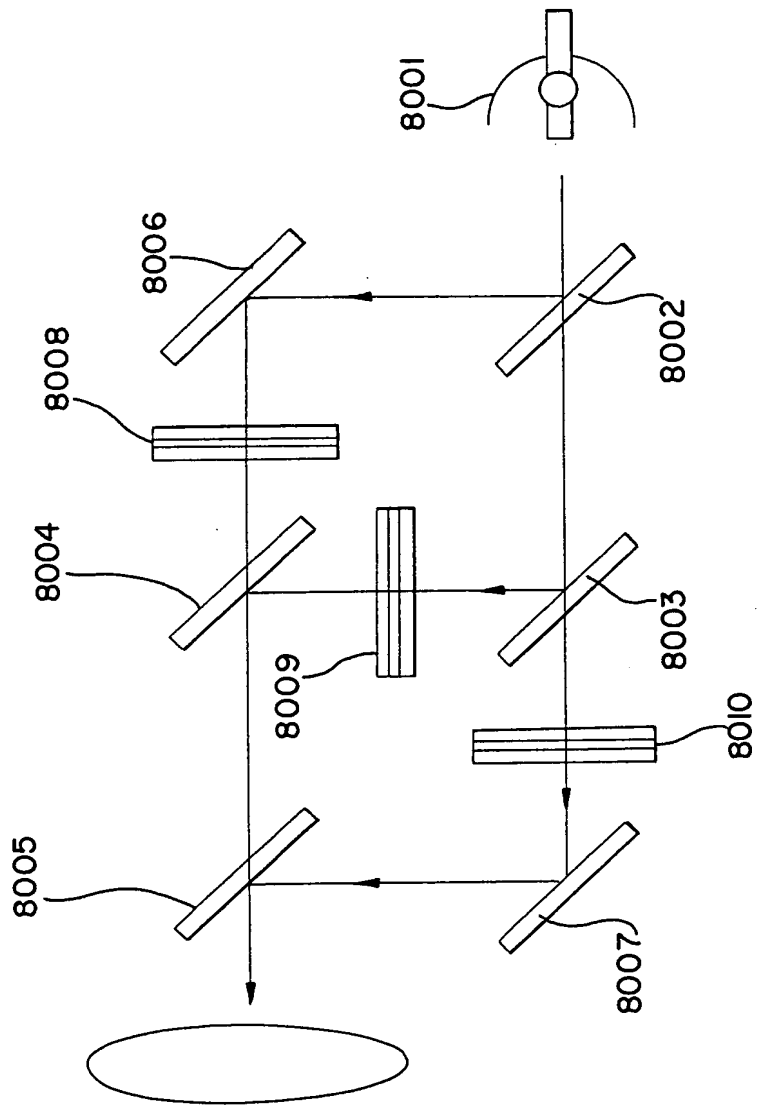


FIG. 19

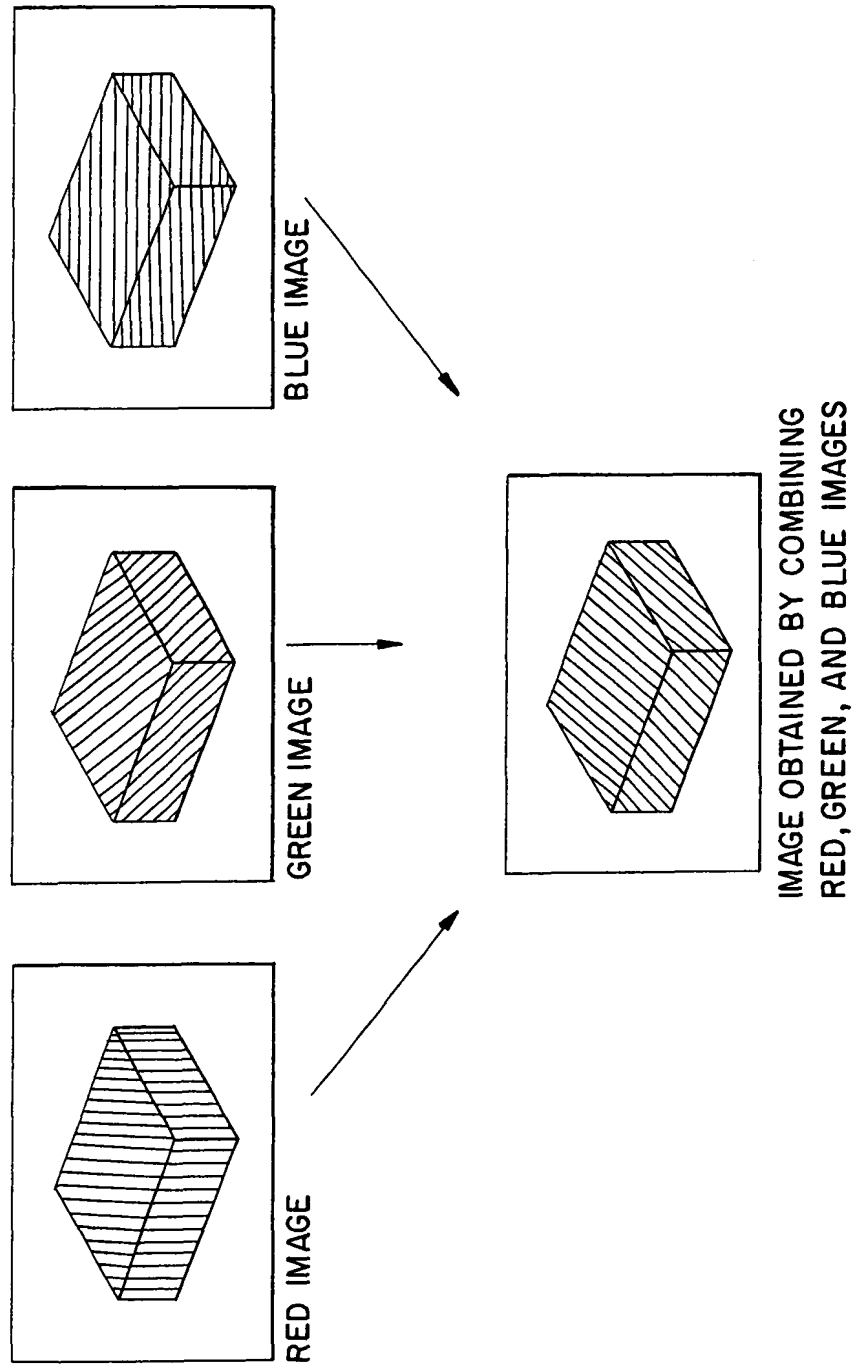


FIG. 20

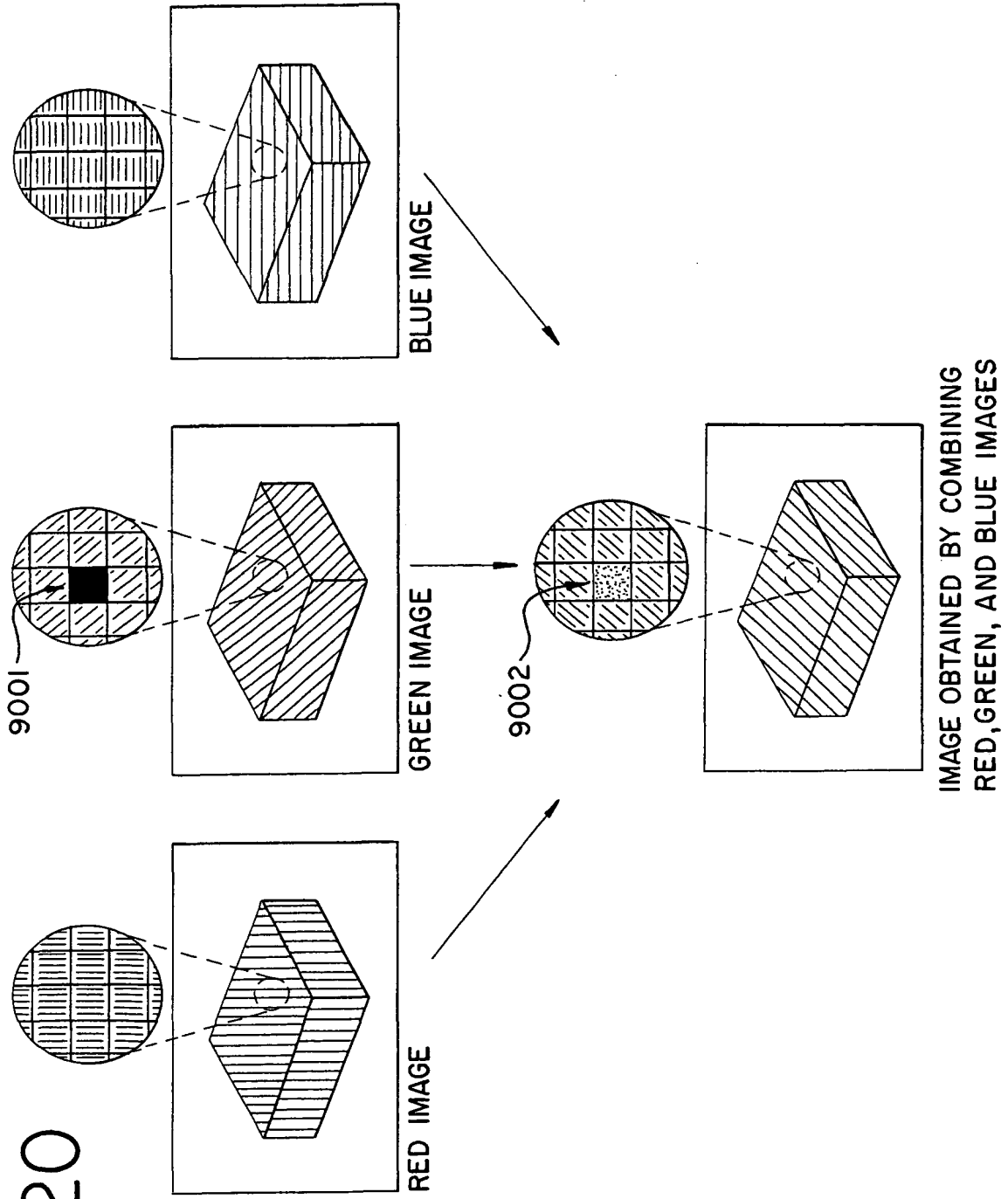


FIG. 21

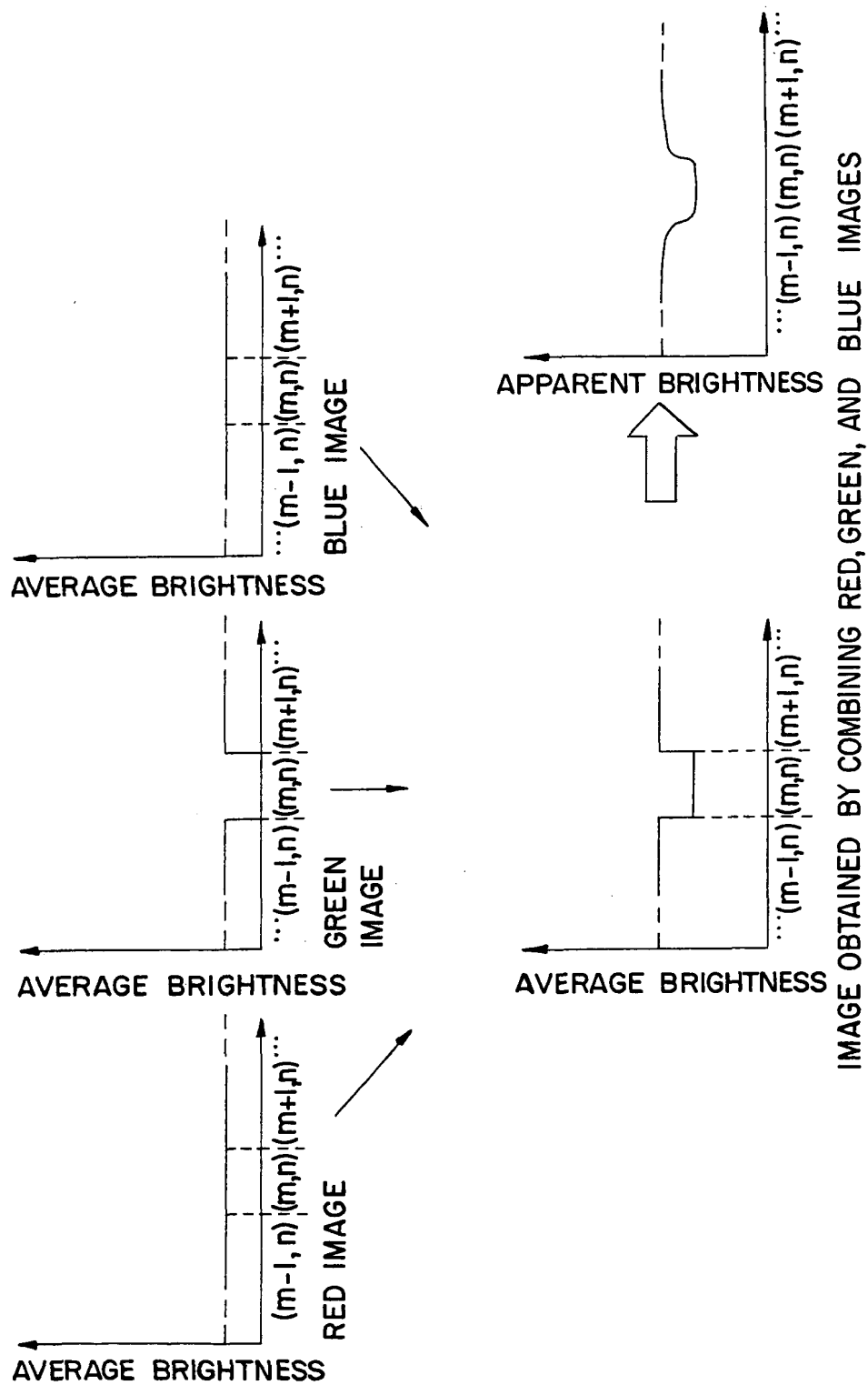
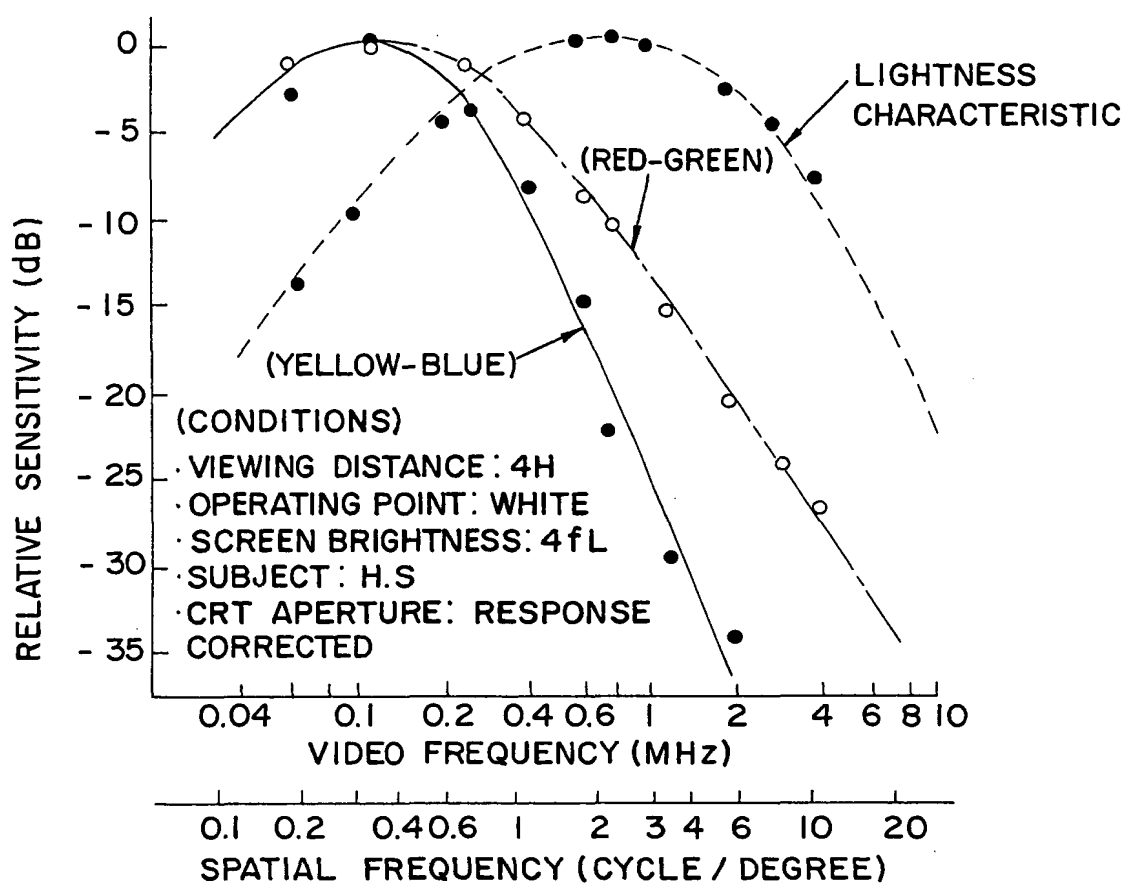


FIG. 22



CHARACTERISTICS OF CHROMATICITY AND BRIGHTNESS